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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,862	12/26/2001	Hong-Man Moon	8733.567.00	7627
30827	7590	08/16/2004	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP			LANDAU, MATTHEW C	
1900 K STREET, NW			ART UNIT	
WASHINGTON, DC 20006			PAPER NUMBER	
			2815	

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/025,862

Applicant(s)

MOON ET AL.

Examiner

Matthew Landau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 and 15-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 15-20 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kusanagi (US Pat. 6,108,057) in view of the admitted prior art.

In regards to claim 1, Figures 4 and 5 of Kusanagi disclose a substrate 14 having a display region and a non-display region; a plurality of pixels in the display region; a plurality of first and second electrodes (36 and 26) on the substrate; a plurality of electrostatic discharge devices 64a/64b (only those horizontally arranged above electrode 60) in the non-display region, wherein each electrostatic discharge device is at a distance of more than one pixel pitch from the pixels; a plurality of first connecting lines (portions of lines 40 between electrode 60 and connections to transistors 64a/64b) in the non-display region, each first connecting line connecting a pixel to one of the electrostatic discharge devices; and a plurality of second connecting lines (portions of lines 40 between pad 30 and connections to transistors 64a/64b), wherein one electrostatic discharge device is located between one of the first connecting lines and one of the second connecting lines. The difference between Kusanagi and the claimed invention is an electric field formed between the first and second electrodes substantially parallel to the substrate when a voltage is applied to the first and second electrodes. Figure 4 of the instant application discloses an in-plane switching device wherein a plurality of first and second

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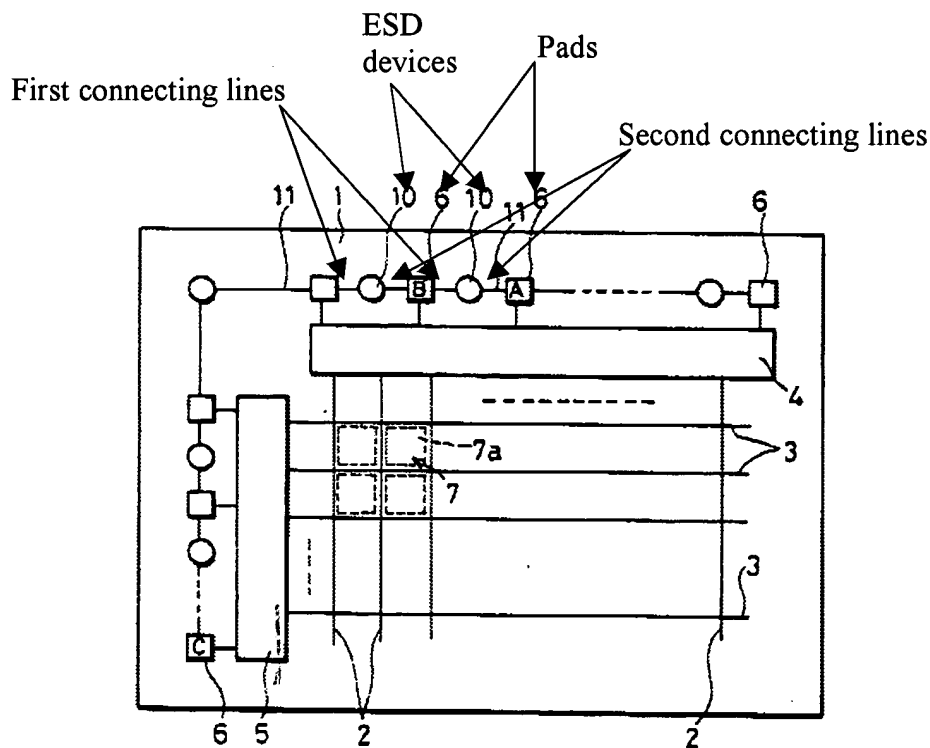
electrodes (34 and 36) such that an electric field formed between the first and second electrodes substantially parallel to the substrate when a voltage is applied to the first and second electrodes. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Kusanagi by using the in-plane switching device of the admitted prior art for the purpose of increasing the viewing angle of the device (page 4, lines 20-24 of the instant application).

Claims 1-10, 12, 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraki et al. (US Pat. 5,926,234, hereinafter Shiraki) in view of the admitted prior art.

In regards to claim 1, Figures 1-4 of Shiraki disclose a substrate 1 having a display region and a non-display region; a plurality of pixels 7 in the display region; a plurality of first and second electrodes (7a and 24) on the substrate; a plurality of electrostatic discharge devices 10 in the non-display region, wherein each electrostatic discharge device is at a distance of more than one pixel pitch from the pixels; a plurality of first connecting lines in the non-display region, each first connecting line connecting a pixel to one of the electrostatic discharge devices; and a plurality of second connecting lines, wherein one electrostatic discharge device is located between one of the first connecting lines and one of the second connecting lines (see below figure, which illustrates of certain claim elements). The difference between Shiraki and the claimed invention is an electric field formed between the first and second electrodes substantially parallel to the substrate when a voltage is applied to the first and second electrodes. Figure 4 of the instant application discloses an in-plane switching device wherein a plurality of first and second electrodes (34 and 36) such that an electric field formed between the first and second

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electrodes substantially parallel to the substrate when a voltage is applied to the first and second electrodes. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Shiraki by using the in-plane switching device of the admitted prior art for the purpose of increasing the viewing angle of the device (page 4, lines 20-24 of the instant application).



In regards to claim 2, Figures 1-4 of Shiraki disclose a plurality of switching devices 8 on the substrate.

In regards to claim 3, Figures 1-4 of Shiraki disclose each switching device 8 is disposed in each pixel.

In regards to claim 4, Figures 1-4 of Shiraki disclose the switching device 8 includes a thin-film transistor.

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In regards to claim 5, Figures 1-4 of Shiraki disclose first and second lines (3 and 2) on the substrate 1.

In regards to claim 6, Figures 1-4 of Shiraki disclose the first and second signal lines (3 and 2) apply signals to each switching device 8.

In regards to claim 7, Figures 1-4 of Shiraki disclose the first line 3 includes a gate line.

In regards to claim 8, Figures 1-4 of Shiraki disclose the second line 2 includes a data line.

In regards to claim 9, Figures 1-4 of Shiraki disclose the first electrodes 7a include a pixel electrode.

In regards to claim 10, Figures 1-4 of Shiraki disclose the second electrodes 24 include a common electrode.

In regards to claim 12, Figures 1-4 of Shiraki disclose a plurality of pads 6 in the non-display region.

In regards to claim 15, Figures 1-4 of Shiraki disclose each second connecting line 11 connects each electrostatic discharge device 10 to each pad 6.

In regards to claim 16, the intended use limitation “wherein a voltage of the first connecting lines is different from a voltage of the electrostatic discharge devices” does not structurally distinguish the claimed invention over Shiraki.

In regards to claim 17, the intended use limitation “wherein each first connecting line receives signal voltage of inverted phase” does not structurally distinguish the claimed invention over Shiraki.

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In regards to claim 18, Figures 1-4 of Shiraki disclose an auxiliary line 11 in the non-display region.

In regards to claim 19, Figures 1-4 of Shiraki disclose the auxiliary line 11 connects each of the electrostatic discharge devices 10.

In regards to claim 20, it is further obvious in the invention of Shiraki and the admitted prior to have the auxiliary line receive a signal applied to the second electrode to contain the flow of ions.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraki in view of the admitted prior art as applied to claim 1 above, and in further view of Seraphim et al. (US Pat. 5,889,568, hereinafter Seraphim).

A further difference between Shiraki and the claimed invention is one pixel pitch is between about 1mm and about 1.5. Seraphim discloses an LCD device wherein the pixel pitch is one millimeter (column 15, lines 45-50). In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to further modify the invention of Shiraki by having a 1 mm pixel pitch for the purpose of simplifying the fabrication process.

***Allowable Subject Matter***

Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Response to Arguments*

Applicant's arguments filed May 20, 2004 have been fully considered but they are not persuasive.

Applicant argues that Kusanagi, Shiraki, and the APA fail to teach first and second connecting lines with electrostatic discharge devices located between the first and second lines, as claimed in claim 1. As explained in the above rejections, Kusanagi and Shiraki do teach first and second connecting lines with electrostatic discharge devices located therebetween.

In response to Applicant's arguments that "one of ordinary skill seeking to solve such problems would not be motivated to modify the device of Shiraki by the teachings of the APA and Seraphim..." the inventions of both Seraphim and Shiraki are drawn to LCD devices and are therefore in the same field of endeavor. Seraphim is merely relied upon for the teaching of a 1 mm pixel pitch. In column 15, lines 45-47, Seraphim teaches that a 1 mm pixel pitch could be manufactured with current techniques. The ability to use current techniques simplifies the production process since no new methods must be designed. The desire to simply fabrication is common goal sought after by producers of all LCD devices. Therefore, the ordinary artisan would be motivated to combine the teachings of Shiraki and Seraphim as set forth in the above rejection.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).




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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (571) 272-1731.

The examiner can normally be reached from 8:30 AM - 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
GEORGE ECKERT  
PRIMARY EXAMINER

Matthew C. Landau

Examiner

August 9, 2004